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FILE COVERS 1907 - 15 May 2007 VOL 146 ISS 21

FILE LAST UPDATED: 1 May 2007 (20070501/ED)

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L74 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:898466 HCAPLUS Full-text

DN 141:366620

TI Method for the reduction of the residual monomer content in aqueous polymer dispersions.

IN Chowdhry, Mubarik Mahmood; Gaschler, Wolfgang

PA BASF AG, Germany

SO Ger. Offen., 8 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10317434	A1	20041028	DE 2003-10317434	20030415 <--
	WO 2004092226	A1	20041028	WO 2004-EP3848	20040413 <--
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	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
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	LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,				
	NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,				
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	TD, TG				
	EP 1615960	A1	20060118	EP 2004-726959	20040413 <--
	EP 1615960	B1	20060816		
	R:				
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	IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	AT 336521	T	20060915	AT 2004-726959	20040413 <--
	US 2006205851	A1	20060914	US 2005-552994	20051013 <--

PRAI DE 2003-10317434 A 20030415 <--
 WO 2004-EP3848 W 20040413 <--

AB To reduce the residual monomer content **aqueous polymer dispersions** are treated at $2 \leq \text{pH} \leq 10$ with an initiator system comprising 0.001-5 weight% (based on total monomers) of persulfates, 0.001-5 weight% of **methylketones** R1C(=O)Me ($\text{R1} = \text{C1-5 alkyl}$) and, optionally catalytic quantities (1-1,000 ppm) of metal (Fe, Cu, Mn, V, Ni, Co, Ti, Cr and/or Ag) ions. Thus, mixing 1500 g of styrene - Bu acrylate **dispersion** (prepared by radical **polymerization** of styrene, Bu acrylate and acrylic acid in water in the presence of surfactants and emulsifying agents at 80° and pH 4.3) having solid content 52 weight% with 2 g of 1% **aqueous** solution of AgNO_3 at room temperature, heating up to 90° , adding 25 g of 23% solution of sodium persulfate and 25 g of 20% solution of acetone in water gave after 1 h mixing a reduction of styrene content from 2,930 to 70 ppm, Bu acrylate from 13,150 to 1,900 and acrylic acid from 3,450 to 1,930 ppm.

IC ICM C08F0006-06

CC 35-3 (Chemistry of Synthetic High Polymers)

ST monomer residue removal **aq polymer dispersion**

initiator; styrene Bu acrylate **dispersion** monomer residue removal; silver nitrate sodium persulfate acetone initiator monomer residue removal

IT **Ketones, uses**

RL: CAT (Catalyst use); USES (Uses)

(aliphatic, initiator component; reducing of residual monomer content of **aqueous polymer dispersions** with an initiator post-treatment)

IT **Disperse systems**

(**aqueous**; reducing of residual monomer content of **aqueous polymer dispersions** with an initiator post-treatment)

IT Cations

(initiator component; reducing of residual monomer content of **aqueous polymer dispersions** with an initiator post-treatment)

IT **Polymerization catalysts**

(radical; reducing of residual monomer content of **aqueous polymer dispersions** with an initiator post-treatment)

IT 25586-20-3P, Acrylic acid-butyl acrylate-styrene **copolymer**

RL: IMF (Industrial manufacture); PREP (Preparation)

(**aqueous dispersion**; reducing of residual monomer content of **aqueous polymer dispersions** with an initiator post-treatment)

IT 67-64-1, Acetone, uses 7439-89-6D, Iron, salts

7439-96-5D, Manganese, salts 7440-02-0D, Nickel, salts

7440-22-4D, Silver, salts 7440-32-6D, Titanium, salts

7440-47-3D, Chromium, salts 7440-48-4D, Cobalt, salts

7440-50-8D, Copper, salts 7440-62-2D, Vanadium, salts

7727-21-1, Potassium persulfate 7727-54-0, Ammonium

persulfate 7761-88-8, Nitric acid silver(1+) salt, uses

7775-27-1, Sodium persulfate

RL: CAT (Catalyst use); USES (Uses)

(initiator component; reducing of residual monomer content of **aqueous polymer dispersions** with an initiator post-treatment)

IT 67-64-1, Acetone, uses 7439-89-6D, Iron, salts

7439-96-5D, Manganese, salts 7440-02-0D, Nickel, salts

7440-22-4D, Silver, salts 7440-32-6D, Titanium, salts

7440-47-3D, Chromium, salts 7440-48-4D, Cobalt, salts

7440-50-8D, Copper, salts 7440-62-2D, Vanadium, salts

7727-21-1, Potassium persulfate 7727-54-0, Ammonium

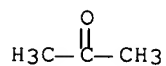
persulfate 7775-27-1, Sodium persulfate

RL: CAT (Catalyst use); USES (Uses)

(initiator component; reducing of residual monomer content of
aqueous polymer dispersions with an initiator
post-treatment)

RN 67-64-1 HCAPLUS

CN 2-Propanone (CA INDEX NAME)



RN 7439-89-6 HCAPLUS

CN Iron (CA INDEX NAME)

Fe

RN 7439-96-5 HCAPLUS

CN Manganese (CA INDEX NAME)

Mn

RN 7440-02-0 HCAPLUS

CN Nickel (CA INDEX NAME)

Ni

RN 7440-22-4 HCAPLUS

CN Silver (CA INDEX NAME)

Ag

RN 7440-32-6 HCAPLUS

CN Titanium (CA INDEX NAME)

Ti

RN 7440-47-3 HCAPLUS

CN Chromium (CA INDEX NAME)

Cr

RN 7440-48-4 HCAPLUS
 CN Cobalt (CA INDEX NAME)

Co

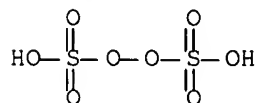
RN 7440-50-8 HCAPLUS
 CN Copper (CA INDEX NAME)

Cu

RN 7440-62-2 HCAPLUS
 CN Vanadium (CA INDEX NAME)

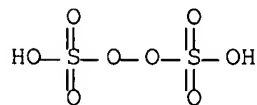
V

RN 7727-21-1 HCAPLUS
 CN Peroxydisulfuric acid ($[(\text{HO})\text{S}(\text{O})_2]_2\text{O}_2$), potassium salt (1:2) (CA INDEX NAME)



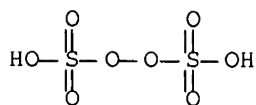
●2 K

RN 7727-54-0 HCAPLUS
 CN Peroxydisulfuric acid ($[(\text{HO})\text{S}(\text{O})_2]_2\text{O}_2$), ammonium salt (1:2) (CA INDEX NAME)



●2 NH₃

RN 7775-27-1 HCAPLUS
 CN Peroxydisulfuric acid ($[(\text{HO})\text{S}(\text{O})_2]_2\text{O}_2$), sodium salt (1:2) (CA INDEX NAME)



●2 Na

L74 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:282627 HCAPLUS Full-text

DN 138:288454

TI Production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**IN **Gaschler, Wolfgang**; **Schaedler, Volker**; **Manders, Lambertus**; **Wirth, Thomas**; **Kroener, Hubertus**PA **Basf Aktiengesellschaft, Germany**

SO PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT **Patent**

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003029316	A1	20030410	WO 2002-EP10969	20020930 <--
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10148511	A1	20030410	DE 2001-10148511	20011001 <--
CA 2461948	A1	20030410	CA 2002-2461948	20020930 <--
AU 2002342780	A1	20030414	AU 2002-342780	20020930 <--
EP 1434806	A1	20040707	EP 2002-779444	20020930 <--
EP 1434806	B1	20060614		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
BR 2002012875	A	20041013	BR 2002-12875	20020930 <--
CN 1561353	A	20050105	CN 2002-819408	20020930 <--
JP 2005504155	T	20050210	JP 2003-532557	20020930 <--
AT 329945	T	20060715	AT 2002-779444	20020930 <--
US 2004242766	A1	20041202	US 2004-491279	20040331 <--
PRAI DE 2001-10148511	A	20011001	<--	
WO 2002-EP10969	W	20020930	<--	

AB An **aqueous** styrene-butadiene **polymer dispersion** is produced by radical **aqueous** emulsion **polymerization** of a monomer mixture comprising styrene, butadiene, and up to 30%, with regard to 100% of the monomers, of ethylenically unsatd. comonomers that differ from styrene and butadiene. The reaction is carried out in a **polymerization** vessel according to a monomer supply method in the presence of a regulator system comprising, in relation to 100% of the monomers, 0.02-0.5% of at least one C6-C20-hydrocarbon selected from compds. forming a pentadienyl radical or a 1-phenylallyl radical by abstraction of a hydrogen atom, or α -methylstyrene dimer, and 0.3-2% of an organic compound

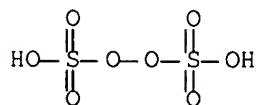
having at least one SH group. The method is characterized in that at least 30%, preferably at least 50%, especially at least 80%, and ideally the entire amount (or more than 95%) of the C6-C20-hydrocarbon is present in the **polymerization** vessel prior to the monomer supply. The styrene-butadiene **polymer dispersion** is used as a binder in pigment-containing paper coating compns. to produce paper with good printability and optical properties. Thus, acrylic acid-butadiene-styrene **copolymer** was produced by radical **aqueous emulsion polymerization** at 85° using polystyrene seeds (30 nm), sodium peroxodisulfate initiator, and a chain-transfer agent system comprising p-1,4(8)-menthadiene and n-dodecylmercaptan. A paper coating composition comprised an **aqueous 50%-dispersion** of this **copolymer** (20), calcium carbonate (70), kaolin (30), poly(acrylic acid) sodium salt (0.4), 25%-sodium hydroxide solution (0.05), CM-cellulose (0.5), and water (64 parts).

- IC ICM C08F0212-08
- ICS C08F0236-06; C08F0291-00; D21H0017-35
- CC 37-3 (Plastics Manufacture and Processing)
- Section cross-reference(s): 42, 43
- ST radical emulsion **polymn aq** styrene butadiene
dispersion prodn; chain transfer agent styrene butadiene radical
emulsion **polymn**; styrene butadiene **dispersion** binder
paper coating compn
- IT Thiols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(C4-C18, chain-transfer agents; production of **aqueous**
styrene-butadiene **polymer dispersions** by radical
emulsion **polymerization**)
- IT Hydrocarbons, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(C6-20, unsatd., chain-transfer agents; production of **aqueous**
styrene-butadiene **polymer dispersions** by radical
emulsion **polymerization**)
- IT Binders
Coating materials
Paper
(**aqueous** styrene-butadiene **polymer dispersions**
used as binders in paper coating compns.)
- IT **Polymerization**
(emulsion, radical, **aqueous**; production of **aqueous**
styrene-butadiene **polymer dispersions** by radical
emulsion **polymerization**)
- IT Chain transfer agents
(production of **aqueous** styrene-butadiene **polymer**
dispersions by radical emulsion **polymerization**)
- IT 99-85-4, p-1,4-Menthadiene 112-55-0, n-Dodecylmercaptan 586-62-9,
p-1,4(8)-Menthadiene 6144-04-3, α-Methylstyrene dimer
RL: RCT (Reactant); RACT (Reactant or reagent)
(chain-transfer agent; production of **aqueous** styrene-butadiene
polymer dispersions by radical emulsion
polymerization)
- IT 7775-27-1, Sodium peroxodisulfate
RL: CAT (Catalyst use); USES (Uses)
(production of **aqueous** styrene-butadiene **polymer**
dispersions by radical emulsion **polymerization**)
- IT 25085-39-6P, Acrylic acid-butadiene-styrene **copolymer**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(production of **aqueous** styrene-butadiene **polymer**
dispersions by radical emulsion **polymerization**)
- IT 7775-27-1, Sodium peroxodisulfate
RL: CAT (Catalyst use); USES (Uses)

(production of **aqueous** styrene-butadiene **polymer**
dispersions by radical emulsion **polymerization**)

RN 7775-27-1 HCAPLUS

CN Peroxydisulfuric acid ([(HO)S(O)2]2O2), sodium salt (1:2) (CA INDEX NAME)



●2 Na

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Basf	1980			EP 0016403 A	HCAPLUS
Fujiwara, W	1997			US 5703157 A	HCAPLUS
Huls Ag	1995			EP 0666274 A	HCAPLUS
Japan Synthetic Rubber	1991			EP 0407059 A	HCAPLUS

L74 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:282626 HCAPLUS Full-text

DN 138:288118

TI Production of **aqueous** styrene-butadiene **polymer**
dispersions by radical emulsion **polymerization**

IN **Gaschler, Wolfgang**; **Schaedler, Volker**; **Manders, Lambertus**;
Wirth, Thomas; **Kroener, Hubertus**

PA **Basf Aktiengesellschaft, Germany**

SO PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DT **Patent**

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003029315	A1	20030410	WO.2002-EP10968	20020930 <--
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	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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	CA 2461947	A1	20030410	CA 2002-2461947	20020930 <--
	AU 2002362490	A1	20030414	AU 2002-362490	20020930 <--
	EP 1434808	A1	20040707	EP 2002-800143	20020930 <--
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	CN 1561350	A	20050105	CN 2002-819394	20020930 <--
	JP 2005504154	T	20050210	JP 2003-532556	20020930 <--

US 2004242767 A1 20041202 US 2004-491283 20040331 <--
 PRAI DE 2001-10148494 A 20011001 <--
 WO 2002-EP10968 W 20020930 <--

AB An **aqueous** styrene-butadiene **polymer dispersion** is produced by radical **aqueous** emulsion **polymerization** of a monomer mixture comprising 40-80% of styrene, 20-60% of butadiene, and 0-40%, with regard to 100% of the monomers, of ethylenically unsatd. comonomers that differ from styrene and butadiene. The **polymerization** is carried out in the presence of 0.05-0.5%, with regard to 100% of the monomers, of at least one hydrocarbon selected from C6-C20-compds. that form a pentadienyl radical or a 1-phenylallyl radical when a hydrogen atom is abstracted, and α -methylstyrene dimer. The method is characterized in that at least 30% of the hydrocarbon is present in the reactor prior to **polymerization**, the rest of the hydrocarbon being fed during the **polymerization** reaction. The resulting **aqueous** styrene-butadiene **polymer dispersions** contain exceedingly small amts. of volatile components. Thus, acrylic acid-butadiene-styrene **copolymer** was produced by radical **aqueous** emulsion **polymerization** at 95° using polystyrene seeds (30 nm), sodium peroxodisulfate initiator, and p-1,4(8)-menthadiene chain-transfer agent.

IC ICM C08F0212-08
 ICS C08F0236-06; C08F0291-00

CC 35-4 (Chemistry of Synthetic High Polymers)

ST styrene butadiene radical emulsion **polymn aq dispersion** prodn; terpene chain transfer agent styrene butadiene radical emulsion **polymn**; methylstyrene dimer chain transfer agent styrene butadiene radical **polymn**

IT Hydrocarbons, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (C6-20, unsatd., chain-transfer agents; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT **Polymerization**
 (emulsion, radical, **aqueous**; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT **Polymerization** catalysts
 (emulsion, radical; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT Peroxides, uses
 RL: CAT (Catalyst use); USES (Uses)
 (**polymerization** catalysts; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

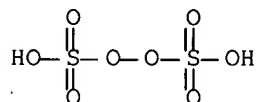
IT Chain transfer agents
 (production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT 99-85-4, p-1,4-Menthadiene 586-62-9, p-1,4(8)-Menthadiene 6144-04-3, α -Methylstyrene dimer
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (chain-transfer agent; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT 7775-27-1, Sodium peroxodisulfate
 RL: CAT (Catalyst use); USES (Uses)
 (production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT 25085-39-6P, Acrylic acid-butadiene-styrene **copolymer**
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
 (production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT 7775-27-1, Sodium peroxodisulfate
 RL: CAT (Catalyst use); USES (Uses)
 (production of aqueous styrene-butadiene polymer
 dispersions by radical emulsion polymerization)
 RN 7775-27-1 HCAPLUS
 CN Peroxydisulfuric acid ([(HO)S(O)2]2O2), sodium salt (1:2) (CA INDEX NAME)



● 2 Na

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Basf	1980			EP 0016403 A	HCAPLUS
Fujiwara, W	1997			US 5703157 A	HCAPLUS
Huls Ag	1995			EP 0666274 A	HCAPLUS
Japan Synthetic Rubber	1991			EP 0407059 A	HCAPLUS

L74 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:282625 HCAPLUS Full-text

DN 138:288117

TI Production of aqueous styrene-butadiene polymer
 dispersions by radical emulsion polymerization

IN Manders, Lambertus; Wirth, Thomas; Gaschler, Wolfgang; Kroener,
 Hubertus

PA Basf Aktiengesellschaft, Germany

SO PCT Int. Appl., 29 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003029314	A1	20030410	WO 2002-EP10967	20020930 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
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CA 2461675	A1	20030410	CA 2002-2461675	20020930 <--
AU 2002347036	A1	20030414	AU 2002-347036	20020930 <--
EP 1434807	A1	20040707	EP 2002-782802	20020930 <--
EP 1434807	B1	20060607		
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AT 328916	T	20060615	AT 2002-782802	20020930 <--
US 2004209993	A1	20041021	US 2004-491336	20040401 <--
US 7196146	B2	20070327		
PRAI DE 2001-10148496	A	20011001	<--	
WO 2002-EP10967	W	20020930	<--	

AB An **aqueous** styrene-butadiene **polymer dispersion** is produced by radical **aqueous** emulsion **polymerization** of a monomer mixture comprising 40-80% of styrene, 20-60% of butadiene, and 0-40%, with regard to 100% of the monomers, of ethylenically unsatd. comonomers that differ from styrene and butadiene. The **polymerization** is carried out in the presence of 0.05-0.5%, with regard to 100% of the monomers, of at least one hydrocarbon selected from C6-C20-compds. that form a pentadienyl radical or a 1-phenylallyl radical when a hydrogen atom is abstracted, and α -methylstyrene dimer. The method is characterized in that the concentration of butadiene in the monomer feed is increased by at least 10% in relation to the monomers in the feed, for a time period of at least 1% of the entire feed duration, when at least 70% of the monomers to be **polymerized** have been fed into the **polymerization** reaction. The resulting **aqueous** styrene-butadiene **polymer dispersions** contain exceedingly small amts. of volatile components. Thus, acrylic acid-butadiene-styrene **copolymer** was produced by radical **aqueous** emulsion **polymerization** at 95° using polystyrene seeds (30 nm), sodium peroxodisulfate initiator, and p-1,4(8)-menthadiene chain-transfer agent.

IC ICM C08F0212-08

ICS C08F0236-10

CC 35-4 (Chemistry of Synthetic High Polymers)

ST styrene butadiene radical emulsion **polymn aq dispersion** prodn; terpene chain transfer agent styrene butadiene radical emulsion **polymn**; methylstyrene dimer chain transfer agent styrene butadiene radical **polymn**

IT Hydrocarbons, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(C6-20, unsatd., chain-transfer agents; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT **Polymerization**

(emulsion, radical, **aqueous**; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT **Polymerization** catalysts

(emulsion, radical; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT Peroxides, uses

RL: CAT (Catalyst use); USES (Uses)
(**polymerization** catalysts; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT Chain transfer agents

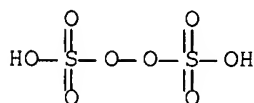
(production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT 99-85-4, p-1,4-Menthadiene 586-62-9, p-1,4(8)-Menthadiene 6144-04-3,
 α -Methylstyrene dimer

RL: RCT (Reactant); RACT (Reactant or reagent)
(chain-transfer agent; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT 7775-27-1, Sodium peroxodisulfate

RL: CAT (Catalyst use); USES (Uses)
 (production of aqueous styrene-butadiene polymer
 dispersions by radical emulsion polymerization)
 IT 25085-39-6P, Acrylic acid-butadiene-styrene copolymer
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
 (production of aqueous styrene-butadiene polymer
 dispersions by radical emulsion polymerization)
 IT 7775-27-1, Sodium peroxodisulfate
 RL: CAT (Catalyst use); USES (Uses)
 (production of aqueous styrene-butadiene polymer
 dispersions by radical emulsion polymerization)
 RN 7775-27-1 HCAPLUS
 CN Peroxydisulfuric acid ([(HO)S(O)2]2O2), sodium salt (1:2) (CA INDEX NAME)



●2 Na

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Basf Ag	1996			DE 4435423 A	HCAPLUS
Japan Synthetic Rubber	1991			EP 0407059 A	HCAPLUS
Wacker Polymer Systems	2001			EP 1065225 A	HCAPLUS

L74 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:282624 HCAPLUS Full-text

DN 138:288116

TI Production of aqueous styrene-butadiene polymer
 dispersions by radical emulsion polymerization

IN Manders, Lambertus; Wirth, Thomas; Gaschler, Wolfgang; Kroener,
 Hubertus

PA Basf Aktiengesellschaft, Germany

SO PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003029313	A1	20030410	WO 2002-EP10966	20020930 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10148497	A1	20030417	DE 2001-10148497	20011001 <--

CA 2461672	A1	20030410	CA 2002-2461672	20020930 <--
AU 2002338845	A1	20030414	AU 2002-338845	20020930 <--
EP 1446431	A1	20040818	EP 2002-777269	20020930 <--
EP 1446431	B1	20060524		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

BR 2002012879	A	20041013	BR 2002-12879	20020930 <--
CN 1561352	A	20050105	CN 2002-819405	20020930 <--
JP 2005504152	T	20050210	JP 2003-532554	20020930 <--
AT 327266	T	20060615	AT 2002-777269	20020930 <--
ES 2263822	T3	20061216	ES 2002-2777269	20020930 <--
US 2004249057	A1	20041209	US 2004-491271	20040331 <--

PRAI DE 2001-10148497 A 20011001 <--

WO 2002-EP10966 W 20020930 <--

AB An **aqueous** styrene-butadiene **polymer dispersion** is produced by radical **aqueous** emulsion **polymerization** of a monomer mixture comprising 40-80% of styrene, 20-60% of butadiene, and 0-40%, with regard to 100% of the monomers, of ethylenically unsatd. comonomers that differ from styrene and butadiene. The **polymerization** is carried out in the presence of 0.05-0.5%, with regard to 100% of the monomers, of at least one hydrocarbon selected from C6-C20-compds. that form a pentadienyl radical or a 1-phenylallyl radical when a hydrogen atom is abstracted, and α -methylstyrene dimer. The method is characterized in that the monomers to be **polymerized** are introduced within three hours of the **polymerization** reaction. The resulting **aqueous** styrene-butadiene **polymer dispersions** contain exceedingly small amts. of volatile components. Thus, acrylic acid-butadiene-styrene **copolymer** was produced by radical **aqueous** emulsion **polymerization** at 95° using polystyrene seeds (30 nm), sodium peroxodisulfate initiator, and p-1,4(8)-menthadiene chain-transfer agent.

IC ICM C08F0212-08

ICS C08F0236-06

CC 35-4 (Chemistry of Synthetic High Polymers)

ST styrene butadiene radical emulsion **polymn aq dispersion** prodn; terpene chain transfer agent styrene butadiene radical emulsion **polymn**; methylstyrene dimer chain transfer agent styrene butadiene radical **polymn**

IT Hydrocarbons, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(C6-20, unsatd., chain-transfer agents; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT **Polymerization**

(emulsion, radical, **aqueous**; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT **Polymerization** catalysts

(emulsion, radical; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT Peroxides, uses

RL: CAT (Catalyst use); USES (Uses)
(**polymerization** catalysts; production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT Chain transfer agents

(production of **aqueous** styrene-butadiene **polymer dispersions** by radical emulsion **polymerization**)

IT 99-85-4, p-1,4-Menthadiene 586-62-9, p-1,4(8)-Menthadiene 6144-04-3,
 α -Methylstyrene dimer

RL: RCT (Reactant); RACT (Reactant or reagent)
(chain-transfer agent; production of **aqueous** styrene-butadiene

polymer dispersions by radical emulsion
polymerization)

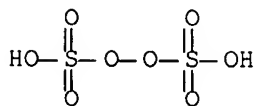
IT 7775-27-1, Sodium peroxodisulfate
RL: CAT (Catalyst use); USES (Uses)
(production of aqueous styrene-butadiene polymer
dispersions by radical emulsion polymerization)

IT 25085-39-6P, Acrylic acid-butadiene-styrene copolymer
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(production of aqueous styrene-butadiene polymer
dispersions by radical emulsion polymerization)

IT 7775-27-1, Sodium peroxodisulfate
RL: CAT (Catalyst use); USES (Uses)
(production of aqueous styrene-butadiene polymer
dispersions by radical emulsion polymerization)

RN 7775-27-1 HCAPLUS

CN Peroxydisulfuric acid ([(HO)S(O)2]2O2), sodium salt (1:2) (CA INDEX NAME)



●2 Na

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Fujiwara, W	1997			US 5703157 A	HCAPLUS
Huls Ag	1995			EP 0666274 A	HCAPLUS
Japan Synthetic Rubber	1991			EP 0407059 A	HCAPLUS

L74 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:185823 HCAPLUS Full-text

DN 134:223499

TI Method for producing an aqueous dispersion of
composite particles including a polymer and fine inorganic
solids

IN Xue, Zhijian; Wiese, Harm

PA Basf A.-G., Germany

SO PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001018081	A1	20010315	WO 2000-EP8510	20000831 <--
W: AU, BR, CA, CN, JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE 19942777	A1	20010315	DE 1999-19942777	19990908 <--
DE 19961964	A1	20010628	DE 1999-19961964	19991222 <--
CA 2383734	A1	20010315	CA 2000-2383734	20000831 <--
BR 2000013698	A	20020507	BR 2000-13698	20000831 <--
EP 1216262	A1	20020626	EP 2000-962418	20000831 <--

EP 1216262 B1 20041103
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, FI, CY
 JP 2004500446 T 20040108 JP 2001-522302 20000831 <--
 JP 3692077 B2 20050907
 AT 281482 T 20041115 AT 2000-962418 20000831 <--
 AU 778549 B2 20041209 AU 2000-74155 20000831 <--
 US 6756437 B1 20040629 US 2002-69960 20020308 <--
 PRAI DE 1999-19942777 A 19990908 <--
 DE 1999-19961964 A 19991222 <--
 WO 2000-EP8510 W 20000831 <--

AB An **aqueous dispersion** of composite particles of **polymers** and fine inorg. solid materials is produced by radical emulsion **polymerization** of ≥ 1 ethylenically unsatd. monomer **dispersed** in an **aqueous** medium and **polymerized** using ≥ 1 radical **polymerization** initiator, in the presence of ≥ 1 **dispersed**, fine inorg. solid material and ≥ 1 **dispersing** agent, each showing different electrophoretic mobilities and signs, and is used especially as an adhesive, binder, coating, modifier for cement and mortar formulations, as well as in medical diagnostics or as a composite powder after drying. The suitable inorg. solids have a solubility in water ≤ 1 g/L at 20°, and form stable **dispersions**, in which $\geq 90\%$ of the originally suspended solids remain **dispersed** (referred to their initial concentration of ≥ 1 weight%) after 1 h, having weight-average diameter of the **dispersed** particles ≤ 100 nm. The inorg. solids used contain ≥ 1 of the following elements: Mg, Ca, Sr, Ba, B, Ti, Cr, Fe, Co, Ni, Cu, Zn, Sn, Zr, Ce, Y, Al, Si, P, Sb and Bi and preferably comprise SiO₂, Al₂O₃, Al(O)OH, CaCO₃, MgCO₃, Ca₃(PO₄)₂, Mg₃(PO₄)₂, FeO, Fe₂O₃, Fe₃O₄, SnO₂, CeO₂, Y₂O₃, TiO₂, ZnO, ZnS, and/or hydroxyapatite. As **dispersing** agent an anionic or cationic emulsifier or a cationic protective colloid is suitable. As radical **polymerization** initiator Na₂S₂O₈, K₂S₂O₈, (NH₄)₂S₂O₈ or 2,2'-azobis(butyramidine)-2HCl is used. Examples (18) of different reaction mixts. are given. A **polymer** film formed from the **dispersion** show a high hardness and low water uptake. Raspberry-like composite particles up to 5000 nm in diameter and with a d. of 1.22 g/cm³ were found by TEM, containing ≥ 50 weight% of the solid surface-bonded.

IC ICM C08F0292-00
 ICS C08F0002-44
 CC 37-6 (Plastics Manufacture and Processing)
 ST composite particle **aq dispersion** radical emulsion
polymn; emulsifier initiator monomer solid stable
dispersion electrophoretic mobility; sedimentation composite
 particle **aq dispersion** powder; coating adhesive binder
 additive diagnostic composite **dispersion**; acrylate deriv styrene
copolymer composite **dispersion**
 IT Alcohols, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (C16-18, ethoxylated, Lutensol AT 18; **aqueous dispersion**
 of composite particles of a **polymer** and inorg. solids)
 IT Diagnosis
 (agents; **aqueous dispersion** of composite particles of a
polymer and inorg. solids in)
 IT Emulsifying agents
 (anionic; in preparation of **aqueous dispersion** of composite
 particles of a **polymer** and inorg. solids)
 IT Composites
 Microparticles
 (**aqueous dispersion** of composite particles of a
polymer and inorg. solids)
 IT Cement (construction material)
 Mortar

- (aqueous dispersion of composite particles of a polymer and inorg. solids in)
- IT Emulsifying agents
(cationic; in preparation of aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT Coating materials
(dispersion, water-thinned; aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT Adhesives
(dispersion; aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT Polymerization
(emulsion, radical; aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT Plastic films
(from aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT Electrophoresis
(mobility in; preparation of aqueous dispersion of composite particles of a polymer and inorg. solids in relation to)
- IT Colloids
(protective; in preparation of aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT 18282-10-5, Tin dioxide
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(Nyacol SN 15; aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT 12626-49-2, Dowfax 2A1
RL: MSC (Miscellaneous)
(anionic emulsifier; aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT 2997-92-4 7727-21-1 7727-54-0 7775-27-1, Sodium peroxodisulfate
RL: CAT (Catalyst use); USES (Uses)
(aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT 471-34-1, Calcium carbonate, uses 546-93-0, Magnesium carbonate 1306-06-5, Hydroxylapatite 1306-38-3, Cerium dioxide, uses 1309-37-1, Iron(III) oxide, uses 1314-13-2, Zinc oxide, uses 1314-36-9, Yttrium(III) oxide, uses 1314-98-3, Zinc sulfide, uses 1317-61-9, Iron oxide (Fe₃O₄), uses 1344-28-1, Aluminum oxide, uses 1345-25-1, Iron(II) oxide, uses 7758-87-4, Calcium orthophosphate 10043-83-1, Magnesium orthophosphate 13463-67-7, Titanium dioxide, uses 24623-77-6, Aluminum hydroxide oxide
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT 57-09-0, CTAB
RL: MOA (Modifier or additive use); MSC (Miscellaneous); USES (Uses)
(cationic emulsifier; aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(colloidal, Levasil 200S; aqueous dispersion of composite particles of a polymer and inorg. solids)
- IT 9003-53-6, Styrene, homopolymer 9011-14-7, Methyl methacrylate, homopolymer 25153-46-2, Styrene-2-

ethylhexylacrylate **copolymer** 25767-47-9, Styrene-butyl
acrylate **copolymer** 25852-37-3, Methyl methacrylate-butyl
acrylate **copolymer**

RL: POF (Polymer in formulation); USES (Uses)

. (complex with fine inorg. particles; **aqueous dispersion**
of composite particles of a **polymer** and inorg. solids)

IT 7440-02-0, Nickel, uses 7440-24-6, Strontium, uses 7440-36-0,
Antimony, uses 7440-39-3, Barium, uses 7440-42-8, Boron, uses
7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses
7440-50-8, Copper, uses 7440-67-7, Zirconium, uses 7440-69-9,
Bismuth, uses

RL: MOA (Modifier or additive use); PEP (Physical, engineering
or chemical process); PROC (Process); USES (Uses)

(elemental or as compound; **aqueous dispersion** of
composite particles of a **polymer** and inorg. solids)

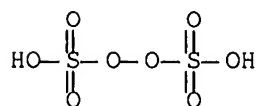
IT 7727-21-1 7727-54-0 7775-27-1, Sodium
peroxodisulfate

RL: CAT (Catalyst use); USES (Uses)

(**aqueous dispersion** of composite particles of a
polymer and inorg. solids)

RN 7727-21-1 HCAPLUS

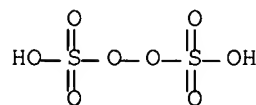
CN Peroxydisulfuric acid ([(HO)S(O)2]2O2), potassium salt (1:2) (CA INDEX
NAME)



●2 K

RN 7727-54-0 HCAPLUS

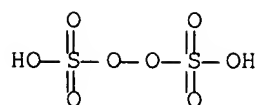
CN Peroxydisulfuric acid ([(HO)S(O)2]2O2), ammonium salt (1:2) (CA INDEX
NAME)



●2 NH3

RN 7775-27-1 HCAPLUS

CN Peroxydisulfuric acid ([(HO)S(O)2]2O2), sodium salt (1:2) (CA INDEX NAME)



●2 Na

IT 7440-02-0, Nickel, uses 7440-47-3, Chromium, uses
 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses
 RL: MOA (Modifier or additive use); PEP (Physical, engineering
 or chemical process); PROC (Process); USES (Uses)
 (elemental or as compound; aqueous dispersion of
 composite particles of a polymer and inorg. solids)
 RN 7440-02-0 HCAPLUS
 CN Nickel (CA INDEX NAME)

Ni

RN 7440-47-3 HCAPLUS
 CN Chromium (CA INDEX NAME)

Cr

RN 7440-48-4 HCAPLUS
 CN Cobalt (CA INDEX NAME)

Co

RN 7440-50-8 HCAPLUS
 CN Copper (CA INDEX NAME)

Cu

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Hermann-Josef, B	1998			US 5750618 A	HCAPLUS
Martin, R	1986			US 4608401 A	HCAPLUS
Mita Industrial Co Ltd	1994			EP 0606930 A	HCAPLUS
Robb, J	1995			US 5431956 A	HCAPLUS
Solc Jitka	1986			US 4609608 A	HCAPLUS
Solc Nee Hajna Jitka	1983			US 4421660 A	HCAPLUS
Tioxide Group Services	1992			GB 2250020 A	HCAPLUS
Tioxide Group Services	1993			EP 0572128 A	HCAPLUS

L74 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1996:724153 HCAPLUS Full-text

DN 125:337183

TI Process for, and use of, **aqueous polymer dispersions** for preserving mineral products, manufacture of the **aqueous** coating materials **dispersions**, and the **aqueous polymer dispersions** obtained

IN Reck, Bernd; Franzmann, Gernot; Bechert, Bertold; Baecher, Reinhard; Rehmer, Gerd

PA BASF A.-G., Germany

SO Ger. Offen., 23 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

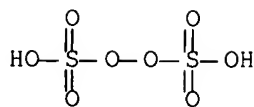
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19514266	A1	19961017	DE 1995-19514266	19950415 <--
	WO 9633143	A1	19961024	WO 1996-EP1481	19960404 <--
	W: AU, BG, BR, CA, CN, CZ, HU, JP, KR, MX, NO, NZ, PL, RO, SG, SI, SK, TR, UA, US, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9653993	A	19961107	AU 1996-53993	19960404 <--
	EP 821660	A1	19980204	EP 1996-910954	19960404 <--
	EP 821660	B1	20041124		
	R: AT, BE, CH, DE, DK, FR, GB, IT, LI, NL, SE, SI, FI				
	CN 1181750	A	19980513	CN 1996-193304	19960404 <--
	HU 9801806	A2	19990329	HU 1998-1806	19960404 <--
	HU 223264	B1	20040428		
	JP 11503710	T	19990330	JP 1996-531445	19960404 <--
	AT 283247	T	20041215	AT 1996-910954	19960404 <--
	CZ 296444	B6	20060315	CZ 1997-3262	19960404 <--
	PL 191596	B1	20060630	PL 1996-322775	19960404 <--
	US 6306460	B1	20011023	US 1997-930576	19971015 <--
	US 2002007005	A1	20020117	US 2001-910847	20010724 <--
	US 6569970	B2	20030527		
PRAI	DE 1995-19514266	A	19950415	<--	
	WO 1996-EP1481	W	19960404	<--	
	US 1997-930576	A3	19971015	<--	

OS MARPAT 125:337183

AB The process comprises coating the mineral products with an **aqueous dispersion** of a **polymer**, in radically **polymerized** form, containing ≥ 1 ethylenically unsatd. acids and/or their conjugated bases having general formula $\text{CH}_2:\text{C}(\text{R}_1)\text{C}(\text{O})\text{XC}(\text{R}_2)(\text{R}_3)(\text{CH}_2)_n\text{SO}_3\text{-Y}^+$ (I) [$n = 0-2$; independently, $\text{R}_1-3 = \text{H}$ or Me ; $\text{X} = \text{H}$ or imino group (NH); $\text{Y} = \text{H}$, alkali metal, or NH_4]. The **aqueous dispersions** are manufactured by (1) providing a mixture containing 10-50 weight of the total amount of water to be used, 0-50 weight% of the total amount of **dispersant** to be used, and at least part of the monomers of type I, heating the mixture to **polymerization** temperature, (2) providing an emulsion containing the balance of the monomers of type I, the balance of the other monomers, the balance of the **dispersant**, and 10-50 weight% of the water to be used, (3) providing a solution of the **polymerization** initiator in 10-20 weight% of the water to be used, adding 1-10 weight% (each) of the emulsion and the solution to the heated mixture and **polymerizing** $\geq 80\%$ of the monomers present, and adding the balance of the emulsion and the solution. Films obtained with the **aqueous polymer dispersions** have glass transition temperature > 20 to 50° and contain 90-95 weight% of ≥ 1 monomers comprising esters of acrylic acid and methacrylic acid with C1-8-alcs., styrene, α -

methylstyrene, o-chlorostyrene, and vinyltoluene, 0.5-5 weight% of ≥ 1 monomers comprising acrylic acid, methacrylic acid, itaconic acid, their alkali metal and NH_4 salts, acrylamide, and methacrylamide, and 0.5-5 weight% of ≥ 1 monomers of type I. Extruded green concrete (sand-cement-water) products spray coated with the emulsions (polymer content 40, antifoaming agent content 5 weight%) to 120 g/m², dried in a climate chamber at relative humidity 50% did not show any efflorescence.

- IC ICM C04B0041-63
- ICS C04B0041-83; C09D0133-14; C09D0133-24
- ICA C08F0002-24; C08F0212-08; C08F0220-12; C08F0236-04; C08F0214-06;
C08F0214-08; C08F0218-04; C08F0210-02; C08F0220-04; C08F0222-02
- ICI C08F0246-00, C08F0220-38, C08F0220-58
- CC 58-2 (Cement, Concrete, and Related Building Materials)
Section cross-reference(s): 42
- ST coating material efflorescence resistant; **aq polymer dispersion** concrete coating; acrylic acid ester **polymer dispersion**; methacrylic acid ester **polymer dispersion**; styrene ester **polymer dispersion**; methylstyrene ester **polymer dispersion**; chlorostyrene ester **polymer dispersion**; vinyltoluene ester **polymer dispersion**; **dispersant polymer dispersion**
- IT **Ketones, uses**
RL: MOA (Modifier or additive use); USES (Uses)
(C13-15, hydroxy, ethoxylated, esters, **dispersants**; compns. for **aqueous polymer dispersions** for efflorescence-resistant coating formation on concrete)
- IT Concrete
(**aqueous polymer dispersions** for efflorescence-resistant coating formation on)
- IT **Dispersing agents**
(compns. for **aqueous polymer dispersions** for efflorescence-resistant coating formation on concrete)
- IT 7775-27-1, Sodium peroxydisulfate
RL: **CAT (Catalyst use)**; **USES (Uses)**
(compns. for **aqueous polymer dispersions** for efflorescence-resistant coating formation on concrete)
- IT 9081-17-8
RL: MOA (Modifier or additive use); USES (Uses)
(**dispersant**; compns. for **aqueous polymer dispersions** for efflorescence-resistant coating formation on concrete)
- IT 25852-91-9D, ethers with C13-15-oxo-alcs.
RL: MOA (Modifier or additive use); USES (Uses)
(**dispersants**; compns. for **aqueous polymer dispersions** for efflorescence-resistant coating formation on concrete)
- IT 7775-27-1, Sodium peroxydisulfate
RL: **CAT (Catalyst use)**; **USES (Uses)**
(compns. for **aqueous polymer dispersions** for efflorescence-resistant coating formation on concrete)
- RN 7775-27-1 HCAPLUS
- CN Peroxydisulfuric acid ([$(\text{HO})\text{S}(\text{O})_2\text{O}_2$), sodium salt (1:2) (CA INDEX NAME)



●2 Na

L74 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1996:110358 HCAPLUS Full-text

DN 124:147180

TI Redox initiator for reducing the content of unreacted monomers in **aqueous dispersions** of vinyl **copolymers**

IN Hartmann, Juergen; Tschang, Chung-Ji; Keller, Peter; Stanger, Bernd

PA BASF A.-G., Germany

SO Ger. Offen., 17 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4419518	A1	19951207	DE 1994-4419518	19940603 <--
	CN 1151747	A	19970611	CN 1995-193986	19950202 <--
	CN 1120180	B	20030903		
	CA 2190995	A1	19951214	CA 1995-2190995	19950220 <--
	WO 9533775	A1	19951214	WO 1995-EP607	19950220 <--
	W: AU, BR, BY, CA, CN, CZ, FI, HU, JP, KR, KZ, MX, NO, NZ, PL, RU, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9517583	A	19960104	AU 1995-17583	19950220 <--
	AU 688468	B2	19980312		
	EP 771328	A1	19970507	EP 1995-910503	19950220 <--
	EP 771328	B1	19981007		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	BR 9507916	A	19970812	BR 1995-7916	19950220 <--
	JP 10502948	T	19980317	JP 1995-500202	19950220 <--
	AT 171956	T	19981015	AT 1995-910503	19950220 <--
	ES 2122559	T3	19981216	ES 1995-910503	19950220 <--
	FI 9604816	A	19961202	FI 1996-4816	19961202 <--
	NO 9605140	A	19970130	NO 1996-5140	19961202 <--
	US 5994457	A	19991130	US 1997-737933	19970228 <--
PRAI	DE 1994-4419518	A	19940603	<--	
	DE 1994-4435423	A	19941004	<--	
	WO 1995-EP607	W	19950220	<--	

AB A redox initiator containing an adduct of a C3-8 **ketone** and H sulfite as the reducing agent is used in a post-polymerization step to decrease the concentration of unreacted monomers in an **aqueous dispersion** of a vinyl **copolymer**. An **aqueous dispersion** of a **copolymer** of styrene, butadiene, acrylic acid, and itaconic acid was prepared and treated with Me3COOH, acetone, and Na disulfite to form a redox initiator which reduced the concentration of unreacted monomers from 1.47% to «1%.

IC ICM C08F0002-22

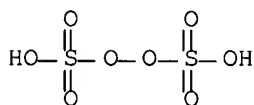
ICS C08F0220-18; C08F0212-08; C08F0236-06; C08F0214-08; C08F0218-04; C08F0210-02; C08F0004-40; C08J0003-03

CC 35-4 (Chemistry of Synthetic High Polymers)

ST redox initiator elimination unreacted monomer copolymer; sulfite redox

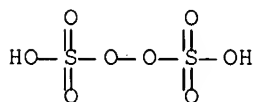
initiator elimination unreacted monomer; **ketone** redox initiator elimination unreacted monomer; polymn suspension elimination unreacted monomer; acrylic acid unreacted elimination dispersion copolymer; vinyl monomer unreacted elimination dispersion copolymer; peroxide elimination unreacted vinyl monomer copolymer

- IT 75-91-2, tert-Butyl hydroperoxide 80-15-9, Cumene hydroperoxide
 94-36-0, Dibenzoyl peroxide, uses 7722-84-1, Hydrogen peroxide, uses
 7727-54-0, Ammonium persulfate 13445-49-3,
 Peroxydisulfuric acid 28324-52-9, Pinane hydroperoxide
 RL: CAT (Catalyst use); USES (Uses)
 (in preparation of redox initiator for elimination of unreacted monomers from vinyl copolymer dispersions)
- IT 67-64-1, Acetone, uses 78-93-3, Methyl ethyl
ketone; uses 96-22-0, Diethyl **ketone**
 7681-57-4
 RL: NUU (Other use, unclassified); USES (Uses)
 (in preparation of redox initiator for elimination of unreacted monomers from vinyl copolymer dispersions)
- IT 7727-54-0, Ammonium persulfate 13445-49-3,
 Peroxydisulfuric acid
 RL: CAT (Catalyst use); USES (Uses)
 (in preparation of redox initiator for elimination of unreacted monomers from vinyl copolymer dispersions)
- RN 7727-54-0 HCAPLUS
 CN Peroxydisulfuric acid ([(HO)S(O)2]2O2), ammonium salt (1:2) (CA INDEX NAME)

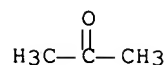


●2 NH3

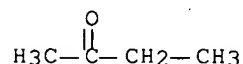
- RN 13445-49-3 HCAPLUS
 CN Peroxydisulfuric acid ([(HO)S(O)2]2O2) (CA INDEX NAME)



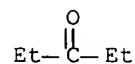
- IT 67-64-1, Acetone, uses 78-93-3, Methyl ethyl
ketone, uses 96-22-0, Diethyl **ketone**
 RL: NUU (Other use, unclassified); USES (Uses)
 (in preparation of redox initiator for elimination of unreacted monomers from vinyl copolymer dispersions)
- RN 67-64-1 HCAPLUS
 CN 2-Propanone (CA INDEX NAME)



RN 78-93-3 HCAPLUS
CN 2-Butanone (CA INDEX NAME)



RN 96-22-0 HCAPLUS
CN 3-Pentanone (CA INDEX NAME)



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FILE 'WPIX' ENTERED AT 09:38:01 ON 15 MAY 2007

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FILE LAST UPDATED: 10 MAY 2007 <20070510/UP>

MOST RECENT THOMSON SCIENTIFIC UPDATE: 200730 <200730/DW>

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>>> New display format FRAGHITSTR available <<<

SEE ONLINE NEWS and

http://www.stn-international.de/archive/stn_online_news/fraghitstr_ex.pdf

>>> IPC Reform backfile reclassification has been loaded to 31 December 2006. No update date (UP) has been created for the reclassified documents, but they can be identified by 20060101/UPIC and 20061231/UPIC. <<<

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<http://scientific.thomson.com/media/scpdf/ipcrdwpi.pdf>

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PLEASE SEE

http://www.stn-international.de/stndatabases/details/dwpi_r.html <<<
 'BI ABEX' IS DEFAULT SEARCH FIELD FOR 'WPIX' FILE

=> d bib ab tech abex tot

L99 ANSWER 1 OF 2 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
 AN 2004-776749 [77] WPIX Full-text
 DNC C2004-272110 [77]
 TI Reducing the residual monomer content in aqueous polymer dispersions involves post-treatment by addition of an initiator system containing an inorganic salt of **persulfuric acid**, a **methylketone** and optionally a catalytic metal ion
 DC A82
 IN CHOWDHRY M M; GASCHLER W; CHOWDHRY M
 PA (BADI-C) BASF AG
 CYC 107
 PIA DE 10317434 A1 20041028 (200477)* DE 8[0]
 WO 2004092226 A1 20041028 (200477) DE
 EP 1615960 A1 20060118 (200606) DE
 EP 1615960 B1 20060816 (200655) DE
 US 20060205851 A1 20060914 (200661) EN
 DE 502004001213 G 20060928 (200664) DE
 ADT DE 10317434 A1 DE 2003-10317434 20030415; EP 1615960 A1 EP 2004-726959 20040413; EP 1615960 B1 EP 2004-726959 20040413; WO 2004092226 A1 WO 2004-EP3848 20040413; EP 1615960 A1 WO 2004-EP3848 20040413; EP 1615960 B1 WO 2004-EP3848 20040413; US 20060205851 A1 WO 2004-EP3848 20040413; US 20060205851 A1 US 2005-552994 20051013; DE 502004001213 G DE 2004-502004001213 20040413; DE 502004001213 G EP 2004-726959 20040413; DE 502004001213 G WO 2004-EP3848 20040413
 FDT EP 1615960 A1 Based on WO 2004092226 A; EP 1615960 B1 Based on WO 2004092226 A; DE 502004001213 G Based on EP 1615960 A; DE 502004001213 G Based on WO 2004092226 A
 PRAI DE 2003-10317434 20030415
 AB DE 10317434 A1 UPAB: 20050707
 NOVELTY - Reduction of the residual monomer content in aqueous polymer dispersions involves post-treatment by addition of an initiator system containing
 (a) an inorganic salt of **persulfuric acid** (0.001-5 weight%);
 (b) a **methylketone** (0.005-5 weight%); and optionally (c) a metal ion in any valency state (catalytic amount) All amounts are based on the amount of monomers used to produce the dispersion.
 USE - None given in the specification.
 ADVANTAGE - The organic component of the initiator system can be easily removed from the dispersion following the residual monomer content reduction.
 TECH POLYMERS - Preferred Materials : Inorganic salt (a) is a sodium, potassium or ammonium salt. The **methylketone** (b) is of formula R1-C(:O)-CH3 where R1 = 1-5C alkyl which can contain functional groups and/or which can be olefinically unsaturated, especially methyl, ethyl, n- or iso-propyl or n- or tertiary. butyl. Metal ion (c) is iron, copper, manganese, vanadium, nickel, cobalt, titanium, cerium, chromium and/or silver. Preferred Process : Components (a) and (b) are added separately during post-treatment of the aqueous dispersion, with the major amount of the catalytic metal ion (c) being added during the post-treatment before (a) and (b). The amount of (c) is 1- 100 ppm. The post-treatment is effected at a dispersion pH of 2-10 in presence of complexing agents.
 ABEX EXAMPLE - An aqueous dispersion (1500 g; 52 wt.% solids and pH 4.3) obtained by free-radical polymerization of styrene, n-butyl acrylate and acrylic acid had its styrene, n-butyl acrylate and acrylic acid residual

monomer contents reduced from 2930, 13150 and 3450 ppm respectively to 60, 990 and 890 respectively by cooling to 20-25degreesC and adjusting the pH under N2 to 6.5 by addition of a 25% sodium hydroxide solution; adding a 1 wt.% solution (2 g) of silver nitrate in deionized water and heating to 90degreesC; stirring while simultaneously adding separately at 12.5 g/hour (i) a 23 wt.% solution (25 g) of sodium persulfate in deionized water and (ii) a 20 wt.% solution (25 g) of acetone in deionized water; and post reacting the mixture for 1 hour at this temperature and then cooling to room temperature.

L99 ANSWER 2 OF 2 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN

AN 1999-205903 [18] WPIX Full-text

DNC C1999-060159 [18]

TI Reducing residual monomer content of aqueous polymer dispersions

DC A18; A60; E17

IN BAUER G; DAMES B; DOBBELAAR J; HEIBEL C; LAWRENZ S; RUPANER R

PA (BADI-C) BASF AG

CYC 1

PIA DE 19741185 A1 19990325 (199918)* DE 7[0]

<--

ADT DE 19741185 A1 DE 1997-19741185 19970918

PRAI DE 1997-19741185 19970918

AB DE 19741185 A1 UPAB: 20050704

NOVELTY - The residual monomer content of aqueous polymer dispersions is reduced by generating radicals in the dispersion with a redox initiator system in presence of a 1-20 C carboxylic acid with a mol. weight of not more than 300 and with no polymerisable carbon-carbon double bonds.

USE - For reducing the residual monomer content of aqueous polymer dispersions, especially e.g. dispersions of (meth)acrylate copolymers, styrene-butadiene copolymers and ethylene-vinyl acetate copolymers.

ADVANTAGE - Enables the reduction of residual monomer content without forming other volatiles or odorous substances and without forming a micro-coagulate. The process is technically easy to use, even in concentrated systems.

TECH

POLYMERS - Preferred Process: The radicals are generated by thermal decomposition of peroxy or azo compounds, by high- energy radiation or by an electrochemical process. The treatment is preferably carried out at 20-150degreesC, optionally under pressure, in presence of a redox system essentially comprising (a) 0.01-5 wt% (based on the total amount of monomer used to make the dispersion) of a mixture of:

(a) a compound of formula R1-O-O-R2 (I), and/or a compound which liberates hydrogen peroxide in aqueous medium;

(b) 30-300 mol% (based on (a)) of a carboxylic acid as above;

(c) 0-1000 ppm (based on total monomer as for (a)) multivalent metal ion with variable valency; and

(d) 0-10 wt% (based on total monomer) of a mineral acid.

Radicals may also be generated by thermal decomposition of peroxy -disulphuric acid and/or a salt thereof.

R1 and R2 = H, 1-8 C alkyl or 6-16 C aryl, at least one of these groups being H

ORGANIC CHEMISTRY - Preferred Reagents: Components (a) and (b) may be replaced by an organic per-acid, preferably performic or peracetic acid, or a salt respectively.

Component (I) is hydrogen peroxide.

Preferred carboxylic acids (b) are formic or acetic acid, or benzoic acid (optionally substituted with at least one 1-8 C alkyl or alkoxy group) or a salt thereof.

ABEX EXAMPLE - A mixture of 15 g 30% aqueous hydrogen peroxide (H2O2) solution, 15 mg iron(II) sulfate heptahydrate, 635 g water and 45 g monomer emulsion ME3 (1110 g n-butyl acrylate, 375 g styrene, 15 g acrylic acid, 75 g sulfated ethoxylated lauryl alcohol Na salt (30% solution), 37

g ethoxylated tallow fatty alcohol (20%) and 610 g water) was heated to 70degreesC, treated with 10 g formic acid solution (4.4 g in 200 g water), treated over 120 minutes with the rest of emulsion ME3 and over 135 minutes with another 194 g of the formic acid solution and then stirred for a further 1 hour at 70degreesC. The cooled, filtered dispersion obtained had a solid content of 49.6%, a pH of 2.6 and an LD value of 60%. 500 g of the dispersion was reheated to 70degreesC and treated with 4.2 g H2O2 solution followed (over 30 minutes) by 18.8 g 10% aqueous formic acid. The treated dispersion showed residual monomer contents of 4000 (45000) ppm n-butyl acrylate, 30 (1580) ppm styrene and less than 10 (less than 10) ppm acrylic acid. Values in brackets are for the untreated dispersion.

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(FILE 'HOME' ENTERED AT 08:02:12 ON 15 MAY 2007)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 08:02:44 ON 15 MAY 2007

L1 1 S US20060205851/PN OR (US2005-552994# OR WO2004-EP3848 OR DE200
E CHOWDHRY/AU
E CHOWDHRY M/AU
L2 28 S E5-E7
E MUBARIK/AU
E MAHMOOD/AU
E GASCHLER/AU
L3 22 S E19,E21,E22
E GAESCHLER/AU
E GEASCHLER/AU
SEL RN L1

FILE 'REGISTRY' ENTERED AT 08:06:32 ON 15 MAY 2007

L4 15 S E1-E15
L5 9 S L4 AND 1/ELC.SUB
L6 1 S 7440-45-1
L7 10 S L5,L6
L8 3 S L4 AND S/ELS
L9 1 S 13445-49-3
L10 97 S 13445-49-3/CRN
L11 31 S L10 AND (NA OR K OR H3N)
L12 8 S L11 AND 2/NC
L13 23 S L11 NOT L12
L14 1 S L13 AND NA AND H3N AND 3/NC
L15 10 S L8,L9,L12,L14
L16 66 S L10 NOT L11-L15
L17 20 S L16 AND NR>=1
L18 46 S L16 NOT L17
L19 42 S L18 AND 2/NC
L20 37 S L19 NOT (COMPD OR C4H11N)
L21 9 S L18 NOT L20
L22 3 S L21 AND H2O
L23 40 S L20,L22
L24 3 S L4 NOT L7,L15
L25 1 S L24 AND C3H6O

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L26 14572 S L15
L27 5313 S L26 (L) CAT/RL
L28 9337 S L26 (L) USES+NT/RL

L29 9337 S L27,L28
 L30 3533 S L29 AND PY<=2003 NOT P/DT
 L31 3556 S L29 AND (PRD<=20030415 OR AD<=20030415 OR PD<=20030415) AND P
 L32 7089 S L30,L31
 L33 329 S L32 AND AQUEOUS?(L)?POLYM?(L)?DISPERS?
 E AQUEOUS/CT
 E POLYMER DISPERS/CT
 E DISPERS/CT
 L34 5523 S E23-E25
 E E23_ALL
 E DISPERS/CT
 E E
 E DISPERS/CT
 E E23+ALL
 L35 37857 S E2,E48,E54
 E E68+ALL
 L36 23462 S E6-E9,E12
 L37 98 S L32 AND L34-L36
 L38 402 S L33,L37
 E KETONE/CT
 E E4+ALL
 L39 0 S L38 AND E5,E6,E7,E10
 E E4+ALL
 L40 3 S L38 AND E4
 L41 7 S L38 AND E159
 L42 16 S L38 AND E4+OLD,NT
 L43 16 S L40-L42
 E KETONES/CT
 L44 3 S L38 AND E129-E144
 L45 16 S L43,L44
 SEL DN AN 2 4 8 9 11 12
 L46 6 S L45 AND E1-E18
 L47 7 S L38 AND L25
 L48 5 S L47 AND L46
 L49 6 S L46,L48
 L50 16 S L7 AND L38
 L51 4 S L50 AND L7(L)CAT/RL
 L52 13 S L50 AND L7(L)USES+NT/RL
 L53 1 S L49 AND L51
 L54 1 S L49 AND L52
 L55 6 S L53,L54,L49
 L56 15 S L50-L54 NOT L55
 SEL DN AN 7 15
 L57 2 S L56 AND E19-E24
 L58 8 S L55,L57
 L59 5 S L1-L3 AND L32
 L60 5 S L59 AND L38
 L61 56 S BASF?/PA,CS AND L32
 E BASF/CO
 L62 30108 S BASF?/CO,PA
 E E6+ALL
 L63 45348 S E2+RT
 L64 4 S E210-E211
 L65 59 S L32 AND L62-L64
 L66 32 S L61,L65 AND L38
 L67 3 S L66 AND ?KETON?
 L68 2 S L66 AND KETONE?/CW,CT
 L69 2 S L66 AND L25
 L70 7 S L67-L69,L60
 L71 12 S L58,L70 AND L1-L3,L26-L70

L72 12 S L71 AND L15,L23,L25,L7
L73 4 S L72 NOT L62,L63,L1-L3
L74 8 S L72 NOT L73

FILE 'HCAPLUS' ENTERED AT 09:16:22 ON 15 MAY 2007

FILE 'WPIX' ENTERED AT 09:16:40 ON 15 MAY 2007

L75 1902 S C08F006-06/IPC,IC,ICM,ICS
L76 1867 S L75 AND (PRD<=20030415 OR AD<=20030415 OR PD<=20030415)
L77 539 S L76 AND A10-G01/MC
L78 358 S L76 AND A10-G01A/MC
L79 154 S L76 AND A10-G01B/MC
L80 1016 S L77-L79
L81 358 S (PERSULFURIC OR PERSULPHURIC OR PER() (SULFURIC OR SULPHURIC))
E PERSULFURIC ACID/CN
E PEROXYSULFURIC ACID/CN
E PEROXYDISULFURIC ACID/CN
L82 2 S E3
L83 68 S R08088/DCN OR R08088/PLE
L84 66 S (PEROXYDISULFURIC OR PEROXYDISULPHURIC OR PEROXY() (DISULFURIC
L85 0 S PER()OXY() (DISULFURIC OR DISULPHURIC) ()ACID
L86 0 S PER()OXY()DI() (SULFURIC OR SULPHURIC) ()ACID
L87 2 S L80 AND L81-L84
L88 3 S L80 AND ?METHYLKETON?
L89 0 S L80 AND ?METHYL KETON?
L90 27 S L80 AND ACETONE
E ACETONE/CN
L91 1 S E3
L92 12735 S R00272/DCN OR R00272/PLE OR 0272/DRN
L93 8 S L80 AND L92
L94 12 S L87,L88,L93
L95 10 S L90 AND L94
L96 12 S L94,L95
L97 17 S L90 NOT L96
L98 2 S L96 AND (2004-776749 OR 1999-205903)/AN
L99 2 S L98 AND L75-L98

FILE 'WPIX' ENTERED AT 09:38:01 ON 15 MAY 2007

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